

WHAT IS CLAIMED IS:

1. A method of designing a layout of an integrated circuit, comprising the steps
of:

first placing a plurality of logic cells in an initial region of the integrated circuit
using a first placement algorithm;

5 partitioning the initial region into two or more partitioned regions; and
second placing a portion of the logic cells in at least one of the partitioned regions
using a second placement algorithm which is different from the first
placement algorithm.

2. The method of Claim 1 wherein the first and second placement algorithms are
quadratic placement algorithms.

3. The method of Claim 2 wherein one of the first or second placement algorithms
is a conjugate gradient placement algorithm.

4. The method of Claim 2 wherein one of the first or second placement algorithms
is a successive over-relaxation placement algorithm.

5. The method of Claim 2 wherein:
the first placement algorithm is a conjugate gradient placement algorithm; and
the second placement algorithm is a successive over-relaxation placement
algorithm.

6. The method of Claim 1 further comprising the steps of:
second partitioning one of the partitioned regions into two or more partitioned
sub-regions; and
third placing a portion of the logic cells in at least one of the partitioned sub-
5 regions using a third placement algorithm which is different from the first
and second placement algorithms.

7. The method of Claim 1 wherein the first placement algorithm is more
computationally efficient than the second placement algorithm.

8. A computer system comprising:

means for processing program instructions;

a memory device connected to said processing means; and

program instructions residing in said memory device for designing a layout of an

5 integrated circuit, wherein said program instructions first place a plurality
of logic cells in an initial region of the integrated circuit using a first
placement algorithm, partition the initial region into two or more
partitioned regions, and second place a portion of the logic cells in at least
one of the partitioned regions using a second placement algorithm which
10 is different from the first placement algorithm.

9. The computer system of Claim 8 wherein the first and second placement
algorithms are quadratic placement algorithms.

10. The computer system of Claim 9 wherein one of the first or second placement
algorithms is a conjugate gradient placement algorithm.

11. The computer system of Claim 9 wherein one of the first or second placement
algorithms is a successive over-relaxation placement algorithm.

12. The computer system of Claim 9 wherein:

the first placement algorithm is a conjugate gradient placement algorithm; and

the second placement algorithm is a successive over-relaxation placement
algorithm.

13. The computer system of Claim 8 wherein said program instructions further
second partition one of the partitioned regions into two or more partitioned sub-regions,
and third place a portion of the logic cells in at least one of the partitioned sub-regions
using a third placement algorithm which is different from the first and second placement
5 algorithms.

14. The computer system of Claim 8 wherein the first placement algorithm is
more computationally efficient than the second placement algorithm.

15. A computer program product comprising:
a computer-readable medium; and
program instructions residing in said medium for designing a layout of an
integrated circuit, wherein said program instructions first place a plurality
of logic cells in an initial region of the integrated circuit using a first
placement algorithm, partition the initial region into two or more
partitioned regions, and second place a portion of the logic cells in at least
one of the partitioned regions using a second placement algorithm which
is different from the first placement algorithm.
16. The computer program product of Claim 15 wherein the first and second
placement algorithms are quadratic placement algorithms.
17. The computer program product of Claim 16 wherein one of the first or second
placement algorithms is a conjugate gradient placement algorithm.
18. The computer program product of Claim 16 wherein one of the first or second
placement algorithms is a successive over-relaxation placement algorithm.
19. The computer program product of Claim 16 wherein:
the first placement algorithm is a conjugate gradient placement algorithm; and
the second placement algorithm is a successive over-relaxation placement
algorithm.
20. The computer program product of Claim 15 wherein said program instructions
further second partition one of the partitioned regions into two or more partitioned sub-
regions, and third place a portion of the logic cells in at least one of the partitioned sub-
regions using a third placement algorithm which is different from the first and second
placement algorithms.

21. The computer program product of Claim 15 wherein the first placement algorithm is more computationally efficient than the second placement algorithm.